

ACCESSION #: 9605060316

LICENSEE EVENT REPORT (LER)

FACILITY NAME: Callaway Plant Unit 1 PAGE: 1 OF 4

DOCKET NUMBER: 05000483

TITLE: Licensed Operators Initiated a Manual Reactor Trip

After a Failed Fuse Caused the Closure of 'B'

Feedwater Isolation Valve

EVENT DATE: 04/02/96 LER #: 96-001-00 REPORT DATE: 04/25/96

OTHER FACILITIES INVOLVED: DOCKET NO: 05000

OPERATING MODE: 1 POWER LEVEL: 100

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR SECTION:

50.73(a)(2)(iv)

LICENSEE CONTACT FOR THIS LER:

NAME: H. D. Bono, Supervising Engineer,

Site Licensing TELEPHONE: (314) 676-4428

COMPONENT FAILURE DESCRIPTION:

CAUSE: X SYSTEM: SJ COMPONENT: FU MANUFACTURER: S156

REPORTABLE NPRDS: NO

SUPPLEMENTAL REPORT EXPECTED: NO

ABSTRACT:

On 4/2/96, at 1045 CDT, a fuse in the 125vdc power supply to the yellow train fast close solenoid on 'B' Main Feedwater Isolation Valve (MFIV), AEFV0040, failed and caused the MFIV to close. The licensed control room operators immediately recognized the closure of the isolation valve, and understanding the inability to maintain steam generator levels with this condition, initiated a manual reactor trip with the plant in Mode 1 at

100% reactor power. All safety systems responded as expected. However, the source range channel N-32 for neutron flux detection failed high subsequent to the trip.

Investigation into the N-32 high flux alarm revealed that the high voltage power supply for neutron flux detection failed high. This resulted in N-32 reading high flux and alarm actuation. Licensed personnel responded in accordance with OTO-SE-00001, "Source Range Nuclear Channel Failure" and entered Technical Specification 3.3.1 on the inoperable source range. The power supply for N32 was replaced.

The fuse failure was attributed to mechanical failure of the thermal link inside the fuse. The failure was not indicative of an electrical overload. The failed fuse and, as a precautionary measure, all corresponding MFIV fast close solenoid 125vdc power fuses were replaced. The plant was returned to Mode 1 at 0508 CDT on 4/3/96. Further evaluation into the source range high voltage power supply failure is being conducted.

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BASIS FOR REPORTABILITY:

This event is reportable per the requirements of 10CFR50.73(a)(2)(iv)

due to a manual actuation of the Reactor Protection System and

automatic actuation of Engineered Safety Features.

PLANT CONDITION AT TIME OF EVENT:

Mode 1 - Power Operations; 100% Reactor Power

Reactor Coolant System: Temperature (average) - 588.3 degrees F

Pressure - 2233 psig

DESCRIPTION OF EVENT:

On 4/2/96, at 1045 CDT, a fuse (1_/) in the 125vdc power supply to

the yellow train fast close solenoid on 'B' Main Feedwater Isolation

Valve (MFIV), AEFV0040 (2_/), failed and caused the MFIV to close.

The licensed control room operators immediately recognized the

closure of the isolation valve, and understanding the inability to

maintain steam generator levels with this condition, initiated a manual reactor trip. All safety systems responded as expected. However, the source range channel N-32 for neutron flux detection failed high subsequent to the trip.

Investigation into the N-32 high flux alarm revealed that the high voltage power supply (3_/) for neutron flux detection failed high.

This resulted in N32 reading high flux and alarm actuation. Licensed personnel responded in accordance with OTO-SE-00001, "Source Range Nuclear Channel Failure" and entered Technical Specification 3.3.1 on the inoperable source range. The power supply for N32 was replaced.

Testing was conducted to assure the source range channel was operable and, the source range panel instrumentation did not initiate the power supply failure.

The plant was returned to Mode 1 at 0508 CDT on 4/3/96.

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ROOT CAUSE:

The root cause of the reactor trip was the 125vdc supply voltage fuse to the yellow train fast close solenoid for AEFV0040 failed. This caused the solenoid to deenergize and fast close the MFIV. The fuse failure was attributed to mechanical failure of the thermal link inside the fuse. The failure was not indicative of an electrical overload.

CORRECTIVE ACTIONS:

The failed fuse and, as a precautionary measure, all corresponding MFIV fast close solenoid 125vdc power fuses were replaced. Further evaluation into the source range high voltage power supply failure is being conducted.

SAFETY SIGNIFICANCE:

The reactor was manually tripped due to the trend in decreasing steam generator levels after the 'B' MFIV closed. Plant safety systems functioned as required. The failure of the N32 power supply did not create a safety hazard. There was no threat to the public health or safety.

PREVIOUS OCCURRENCES:

None.

FOOTNOTES:

The system and component codes listed below are from IEEE Standards 805-1984 and 803A-1983 respectively:

(1_/) System - SJ, Component - FU

Manufacturer: Gould Shawmut

Description: Tri-onic fuse

Part Number: TRM3.2

(2_/) System - SJ, Component - ISV

(3_/) System - IG, Component - JX

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Callaway Plant

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Union

Electric

April 29, 1996

U. S. Nuclear Regulatory Commission

Attn: Document Control Desk

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ULNRC-3371

Gentlemen:

DOCKET NUMBER 50-483

CALLAWAY PLANT UNIT 1

FACILITY OPERATING LICENSE NPF-30

LICENSEE EVENT REPORT 96-001-00

LICENSED OPERATORS INITIATED A MANUAL REACTOR TRIP

AFTER A FAILED FUSE CAUSED THE CLOSURE OF 'B' FEEDWATER

ISOLATION VALVE

The enclosed licensee event report is submitted pursuant to

10CFR50.73 (a)(2)(iv) due to a manual actuation of the Reactor

Protection System and automatic actuation of Engineered Safety

Features when licensed operators initiated a manual reactor trip

after a failed fuse caused the closure of 'B' feedwater isolation

valve.

R. D. Affolter

Manager, Callaway Plant

RDA/HDB/MAH/tdf

Enclosure

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